FIBER OPTIC AND LED FOUNTAIN AND METHOD

[0001] The present application is a regular patent application based upon and claiming the benefit of provisional patent application serial no. XXX, filed November 26, 2003.

[0002] The present invention relates to a fountain with fiber optic lights and LED (light emitting diode) lights. Additionally, the fiber optic and LED fountain is turned ON/OFF or switched into different operational modes (fountain ON/OFF, fiber optic ON/OFF and LED ON/OFF) based upon a human hand clap or other predetermined audio sound. A method of illuminating a table top fountain is also established.

Background of the Invention

[0003] Table top fountains are known which incorporate LED lights directing multi-colored light upwards into a downwardly falling waterfall or stream. The light from these LEDs is reflected off the droplets of falling water towards the viewer. Additionally, the LED lights may cycle ON and OFF to achieve different color combinations for the table top water fall.

Objects of the Invention

[0004] It is an object of the present invention to provide a table top fountain with fiber optic lit backdrop and an LED lighted waterfall.

[0005] It is an additional object of the present invention to provide an audio control for the LED and the fiber optic fountain.

Summary of the Invention

[0006] The lighted table top water fountain includes a water bowl, a superstructure rising from the water bowl with a view area over said water bowl, a pump supplied with electrical power, and a water delivery system to carry water from said water bowl through said superstructure above the view area and

drop the water into the view area. The lighted fountain a plurality of light emitting diodes (LEDs) mounted beneath the view area such that the waterfall is illuminated by the upwardly directed LEDs. A fiber optic light system is mounted between a scene board and a backboard, both of which are mounted at the rear of the superstructure behind the view area. Light generated from the fiber optics is emitted from said scene board into said view area and is reflected and refracted off of the waterfall. Optionally, an audio control turns ON and OFF the lights.

Brief Description of the Drawings

[0007] Further objects and advantages of the present invention are set forth in the detailed description which follows, when taken in conjunction with the accompanying drawings in which:

[0008] FIG. 1 diagrammatically illustrates the table top LED and fiber optic fountain of the present invention;

[0009] FIG. 2 diagrammatically illustrates a side view of the fountain of FIG. 1;

[0010] FIG. 3 diagrammatically illustrates a perspective view of the fountain in an OFF mode or condition;

[0011] FIG. 4 diagrammatically illustrates the major operational components of the fountain (including the audio control, which may be omitted in certain embodiments); and,

[0012] FIG. 5 shows a basic operational flow chart for one audio control sequence (other operational sequences may be utilized).

Detailed Description of the Preferred Embodiments

[0013] FIG. 1 diagrammatically illustrates table top fountain 10 having base 12, water bowl 14, and superstructure 16 mounted atop water bowl 14 and base 12. Water flow or water droplets 18a, 18b and 18c are dropping or dripping from upper region 20 of superstructure 16. The backside or rear of superstructure 16 includes a backboard (not shown) and a scene board 22. Water droplets 18a, b and c are generally laterally spaced apart or away from scene board 22. Scene board 22 has a plurality of holes or apertures 24a, 24b, 24c through which fiber optic generated light is emitted.

[0014] FIG. 2 diagrammatically illustrates a side elevational view of fountain 10. Backboard 21 is mounted at the backside or rear of superstructure 16. The scene board 22 (not shown in FIG. 2) is located at an intermediate portion in the superstructure. Fiber optic lights are mounted in the interspace between the backboard and the scene board such that, when illuminated, the fiber optic generated light passes through the holes in the scene board such that a viewer can see the multi-colored fiber optic light. Water droplets or water flow 18a-c are generated during operation at another intermediate lateral section of superstructure 16, that is, laterally spaced away from the scene board.

[0015] FIG. 3 shows another fiber optic-LED fountain 10 with a different shaped base 13. Superstructure 16 includes, at its bottom, a water bowl 14. Scene board 22 includes a plurality of holes, one of which is hole 24a. It should be noted that the fiber optic-LED fountain, base, and superstructure 16 can be configured in to a variety of different ornamental designs.

[0016] FIG. 4 diagrammatically illustrates the various components of the fiber optic-LED audio control or sound sensor fountain 10. It should be noted that the audio control may be omitted from the system. The fountain can be powered either by AC power via adaptor 50 or may be powered by battery

55 (designating one or more batteries). Additionally, battery 55 may be a rechargeable battery. Adaptor 50 is electrically connected to coupler plug 55 which mates and electronically connects with a mating coupler unit 54. Coupler 54 is mounted in a box 56 and the box can either hold battery 55 or additionally retain a conversion system to convert the electrical power to the proper voltage and amperage for the remainder of the circuitry. A global ON/OFF switch 58 is provided. Switch 58 is accessible to the user outside the shell base 13 since box 56 is mounted within and generally underneath base 13 of fountain 10. Electrical power from box 56 is supplied via line 59 to control circuit 57. If the system omits the audio control, components 60 and 57 are not utilized.

[0017] Audio control circuit 57 is further controlled by an audio sensor 60. Sensor 60 may sense various sharp sounds such as a hand clap, whistle, hoot voice tone, or hand clap according to factory pre-set conditions. Activation of sound sensor 60 changes the fiber optic ON/OFF, changes the LED ON/OFF and changes the fountain flow ON/OFF (dependent upon factory set operational modes) in addition to various combinations of the same. A plurality of LEDs 62a, b are connected to control circuit 57. In one embodiment, a bright white LED 62a is used in conjunction with a colored LED 62b and several other colored LEDs not numerically identified in FIG. 4. Control circuit 57 includes a subsequence control for said LEDs which sequentially turns ON and OFF different colored lights at different times. The LEDs are mounted beneath a screen in water bowl region 14 such that the light from the LEDs is emitted upward through the water bowl. When the LEDs are beneath the water bowl, light is emitted upward as shown by upward arrow 63. The upwardly directed light is subsequently reflected off droplets of water 18a-c which fall from the water works retained in the top portion 20 of super structure 16. Typically,

LEDs 62a, b are mounted beneath a water screen discussed later. Circuit 57 may cycle various LEDs ON and OFF at certain times to change the color display of the fountain from white to blue to red to white, etc.

[0018] Control circuit 57 also is connected to a fiber optic light generator 64 which in turn is mechanically and optically connected to a plurality of fiber optic strands 66. Fiber optic strands 66 are mounted between backboard 21 and scene board 22. As discussed earlier in conjunction with FIGS. 1 and 3, scene board 22 has a plurality of holes 24a-c through which light is emitted or passes. The light is carried and generated by the fiber optic strands 66. Fiber optic generator 64 can illuminate all or portions of the fiber optic strands such that the light appears to change in various regions of the board as time passes. The fiber optic light may be multi-colored. For example, the left region of scene board 22 may be illuminated at a different time compared with a mid-region and, at another time, a right region of scene board 22 may be illuminated. The fiber optic lights are typically subject to a subsequence light control to activate all or part of the fiber optic system at different times.

[0019] Regarding hydraulics, control circuit 57 is connected to a water pump 70. Water pump 70 is disposed in lower region 15 of base 13. Region 15 also defines a lower water bowl. Water from lower bowl region 14 is pumped via pump 70 through hose or tube 72 upwards vertically to the top of super structure 16 and the output of hose 70, that is output 73, is disposed over water disbursement plate 74. Disbursement plate 74 is mounted in the top region of superstructure 16 as shown by positional line b. Water disbursement plate 74 includes a plurality of holes, one of which is hole 75, such that water from hose output 73 flows over disbursement plate 74 and is more or less evenly disbursed throughout the top region 20 of super structure 16. The water, as it exits water disbursement plate 74, falls vertically downward through open region 90 of fountain 10. As discussed earlier, the upwardly directed light from

LEDs 62a, b, is reflected off the water droplets 18a-c (FIG. 1) providing a unique visual appearance to the user. Water, after it passes through central open region 90 of the fountain, strikes wire net 76. Wire net or mesh 76 is disposed on a lip in the lower region of upper water bowl 14. Positional line a shows that wire net 76 is disposed in the upper water bowl 14. Positional line c indicates that scene board 22 and, by implication, fiber optic bundle 66 and back board 21, is mounted in the backside of superstructure 16.

[0020] FIG. 5 diagrammatically illustrates one control flowchart for fountain. Other control routines may be used. In this embodiment, global switch 58 is activated ON thereby starting the water fountain and pump 70. Hence, water flows and falls through open region 90 of the superstructure 16 into upper water bowl 14 and eventually lower water bowl 15. Tube 70 recycles the water from pump 70 up to disbursement plate 74. Upon detection of a specific audio signal (clap, whistle, voice), the system detects the sound 102 and turns ON fiber optic systems 64, 66 as step 104. Upon the second audio detection 106, the control circuit 57 turns ON the LEDs 62a, b in step 108. Upon third detection 110 of the specific audio sound, the control system turns everything OFF 112. Of course, other sequential operations may be utilized. The water pump may also be subject to audio control.

[0021] The claims appended hereto are meant to cover modifications within the scope and spirit of the present invention. What is claimed in: